Developing and Enforcing Lane Closure Policies

A survey of lane closure policies highlights trends and discusses how transportation agencies deal with policy exceptions.

Objectives
- Catalogue and compare lane closure policies, including the undocumented aspects of these policies.
- Understand the motivation for lane closure policy development.
- Compare strategies regarding lane closure policy exceptions.
- Compare enforcement strategies.

Problem Statement
Traffic volume increases and an aging infrastructure require reconstruction, rehabilitation, and maintenance of existing facilities. However, resulting lane closures that reduce capacity through the work zone should not create unreasonable motorist delays. To help determine acceptable lane closures, some state transportation agencies (STAs) have developed policies for determining permitted lane closure times—the times of the day, week, or season a lane closure is allowed on a specific road segment.

Technique Description
This research addresses the lane closure policies of several STAs reputed to have good strategies:
- California Department of Transportation (Caltrans)
- Colorado Department of Transportation (CDOT), Region 1 and Region 6
- Indiana Department of Transportation (INDOT)
- Minnesota Department of Transportation (Mn/DOT), Metropolitan District
- Missouri Department of Transportation (MoDOT)
- Ohio Department of Transportation (ODOT)
- Wisconsin Department of Transportation (WisDOT)

Researchers reviewed the available policy documents of each agency. Then a survey was sent to each STA to determine its actions with respect to the undocumented mechanics of the policy. The survey consisted of three parts: (1) policy development, (2) exceptions to the policy, and (3) policy enforcement.

Key Findings
Each STA's lane closure policy is unique in its components and, although some states perform similar tasks, they do not necessarily perform each task at the same point in the process. While some of the policies were well-developed and extensively documented, others were still undergoing development.
Policy Development

The procedure used by STAs to determine when and where a lane closure is permitted generally consists of the following tasks:

1. Obtain current hourly traffic volumes where the work zone will be located
2. Determine a work zone lane capacity
3. Determine the impacts on traffic caused by a work zone
4. Use these components to determine whether or not a lane closure will be permitted. Commonly used methods for determining closures include computer analysis, application of static volume thresholds, or both.

Local traffic pattern variations (due to special events, weather, tourism, or holidays) should be accommodated in lane closure policies to decrease the likelihood of unreasonable queues or delays. Local conditions that can cause traffic to vary can include special events, weather, holiday traffic, or seasonal variances where volume can increase in one direction of travel due to tourism.

Formal variations described in STA policies/procedures

<table>
<thead>
<tr>
<th>STA</th>
<th>Yes/No</th>
<th>Types of variations described</th>
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<tbody>
<tr>
<td>Caltrans</td>
<td>Yes</td>
<td>Each closure is reviewed individually to account for variations, specific holidays</td>
</tr>
<tr>
<td>CDOT Region 1</td>
<td>Yes</td>
<td>Special events, seasonal, weekday/weekend, emergency situations</td>
</tr>
<tr>
<td>CDOT Region 6</td>
<td>Yes</td>
<td>Special events, seasonal, weekday/weekend, emergency situations</td>
</tr>
<tr>
<td>INDOT</td>
<td>Yes</td>
<td>Seasonal, regional patterns</td>
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<tr>
<td>Mn/DOT Metro</td>
<td>No</td>
<td>*</td>
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<tr>
<td>MoDOT</td>
<td>No</td>
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<tr>
<td>ODOT</td>
<td>Yes</td>
<td>Seasonal, holidays</td>
</tr>
<tr>
<td>WisDOT</td>
<td>Yes</td>
<td>Holidays, special events, seasonal</td>
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* Next edition will account for seasonal variations
** Variations are accounted for in hourly traffic volume reviews

Systems that specify permitted lane closures based on specific days of the week depict actual conditions more accurately than systems that generalize any lane closure Monday through Friday as a “weekday closure.” Graphic representations of lane closure times allow for a quick determination of general time periods when lane closures are permitted, while hourly breakdowns offer more precise beginning and ending times.

Exceptions to the Policy

The surveyed STAs indicated that (1) lane closure time exceptions involve circumstances that are truly out of the ordinary and (2) appropriate criteria and processes for granting exemptions have been incorporated into their lane closure policies. All agencies exempted emergency lane closures involving public safety from their official lane closure policies. Emergency repairs are also commonly exempted. While some STAs specify activities that are automatically exempted, others review circumstances on a case-by-case basis.

Policy Enforcement

Enforcement of a lane closure policy is important for reducing congestion and maintaining the integrity of the policy. However, most states indicated that enforcement issues are rare. Enforcement protocols include monitoring the lane closure initiation and removal times, monitoring permitted exceptions, monitoring traffic volumes during a closure by measuring queue lengths or delay, and instituting penalties for noncompliance.

Implementation Benefits

Lane closure policies can be a valuable component of an STAs overall safety and mobility objectives. These policies aim to reduce work zone-induced congestion by preventing lane closures when traffic demand would exceed the resulting capacity.